



# Bullet™ GPS L1/L2 Antenna

## Dual Band (DB) GPS L1 & L2

The Protempis Bullet dual band GPS L1/L2 antenna is designed specifically to address the need of “critical infrastructure sectors” of the economy.

GNSS timing application will benefit from increased signal availability, L1/L2 redundancy and elimination of atmospheric effects using dual frequencies techniques.

## Put It Anywhere

The antenna is housed in weatherproof packaging designed to withstand exposure to shock, vibration, extreme temperatures, rain, snow and sunlight.

The dome is all plastic, and the threaded socket in the base of the antenna. The socket accepts either a 1”-14” straight thread (typical marine antenna mount) or a 3/4” pipe thread.

The F-type or TNC antenna connector is located inside the threaded socket, which allows the antenna cable to be routed inside a mounting pole and protects the cable connection.

## Strong Performance

The Bullet dual band antenna is an active GPS L1 and L2 bands antenna with 35dB preamp (5V DC), 30dB preamp (3.3 VDC). The high-gain preamp allows the Bullet DB antenna to be used with up to 75 feet of RG-58 or RG-59 cable. The Bullet DB filtering improves impunity to other RF signals for reliable performance in hostile RF jamming environments.

## Proven Reliability

For over 20 years, Protempis has sold GPS antennas renowned for their survivability in tough environments. The Bullet dual band antenna is the fifth generation of the proven Bullet antenna family and offers all the reliability and performance benefits that are required for mission critical installations.

In unforgiving environments, an antenna failure could be disastrous. Don't risk it. Select a proven GNSS antenna – the Protempis Bullet DB antenna.



## Key Features

- Dual Frequency – GPS L1 and L2 bands
- Weatherproof housing
- Extended temperature range (-40°C / +85°C)
- High gain 35±3dB
- Filtering for RF Jamming environments
- Available in 3.3V (TNC) or 5V (TNC or F)
- RoHS-II Compliant



### Disclaimer

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## Specification

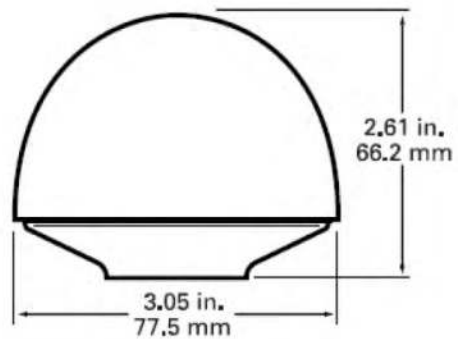
Operating Temperature.....-40°C to +90°C  
 Storage Temperature.....-40°C to +90°C  
 Vibration.....10 – 200 Hz Log sweep  
 3g (Sweep time 30 minutes) 3 axes  
 Shock.....50g vertical, 30g all axes  
 Humidity Soak.....+60°C @ 95% RH, 96 hours  
 Corrosion Salt Resistant.....5% Salt spray tested, 96 hours

### PHYSICAL CHARACTERISTICS – 3.3V & 5V DC ANTENNAS

Dimensions.....3.05”D x 2.61” H (77.5mm x 66.2mm)  
 Weight.....7.0oz (200 grams)  
 Enclosure.....Off-white plastic  
 Connector.....F-type & TNC (5V) – TNC (3.3V only)  
 Mounting.....1” – 14” thread or ¾” pipe thread

| Feature                           | 3.3V   | 5.0V   |
|-----------------------------------|--|--|
| Prime Power                       | 3.3V DV (±10%)   | 5.0V DV (±10%)   |
| Power Consumption                 | <20mA  | <35mA  |
| Gain                              | 32dB @ 25°C  | 36dB ± 3dB   |
| Output Impedance                  | 50Ω  | 50Ω  |
| Frequency                         | L1 1575.42 ± 3MHz<br>L2 1227.60 ±3MHz  | L1 1575.42 ± 3MHz<br>L2 1227.60 ±3MHz  |
| Polarization                      | RHCP   | RHCP   |
| VSWR                              | 2.0 maximum  | 2.0 maximum  |
| Axial ratio                       | <3dB   | <3dB   |
| Noise                             | 3.3dB max (25°C ± 5°C)   | 3.3dB max (25°C ± 5°C)   |
| Bandwidth (10dB RL)               | L1: 30MHz (min)<br>L2: 15MHz (min)   | L1: 30MHz (min)<br>L2: 15MHz (min)   |
| Out of Band rejection             | fo=1575.42 MHz<br>fo ±50 MHz: 30 dB min<br>fo ±100MHz: 40dB min<br>fo=1227.60 MHz<br>fo ±50 MHz: 30 dB min<br>fo ±100MHz: 40dB min   | fo=1575.42 MHz<br>fo ±50 MHz: 30 dB min<br>fo ±100MHz: 40dB min<br>fo=1227.60 MHz<br>fo ±50 MHz: 30 dB min<br>fo ±100MHz: 40dB min |
| Blocking 1dB<br>Compression Point | 100MHz to 1.5GHz >+15dBm<br>1.5GHz to 1.575GHz Linear decrease from +15dBm to -40dBm over frequency range<br>1.575GHz to 1.65GHz Linear increase from -40dBm to +15dBm over frequency range<br>1.65GHz to 3GHz >+15dBm |  |
| Azimuth coverage                  | 360° (omni-directional)  | 360° (omni-directional)  |
| Elevation coverage                | 0°-90° elevation (hemispherical)   | 0°-90° elevation (hemispherical)   |

## Mechanical



## Connectors



Please go to [www.stepglobal.com](http://www.stepglobal.com) for the latest documentation and tools, part numbers and ordering information.

[www.stepglobal.com](http://www.stepglobal.com)



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